

Claims

1. A media control valve, comprising:
 - a valve body having a media inlet and a media outlet;
 - a plunger positioned within the valve body;
 - 5 a sleeve positioned within the valve body;
 - a media opening in the sleeve having a first portion proximate to the media outlet and a second portion distal to the media outlet, wherein the second portion is broader than the first portion;
 - a housing connected to the valve body;
 - 10 a piston positioned within the housing and connected to the plunger; and
 - a base connected to the valve body in communication with the media outlet.
2. The valve of claim 1, wherein the base comprises a unitary structure including a fluid passage and an attachment mechanism adapted to attach the base to the valve body.
- 15 3. The valve of claim 1, wherein the base comprises a fluid passage and a flow sleeve within the fluid passage.
4. The valve of claim 3, wherein the flow sleeve is comprised of a wear resistant material.
- 20 5. The valve of claim 3, wherein the flow sleeve is comprised of a chemically resistant material.
- 25 6. The valve of claim 1, wherein the piston comprises a contaminant isolation region.
7. The valve of claim 6, wherein the piston is convex in the direction of the valve body.
8. The valve of claim 1, further comprising at least one seal positioned between the plunger and the valve body adapted to resist the passage of one of media, fluid, contaminants, and combinations thereof between the valve body and the housing.
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9. The valve of claim 8, comprising three seals between the plunger and the valve body.
10. The valve of claim 9, wherein the three seals are constructed as a unitary piece.
- 5 11. The valve of claim 1, wherein the housing comprises an exhaust chamber including a vent.
12. The valve of claim 11, wherein the vent comprises a filter.
- 10 13. The valve of claim 12, wherein the filter is adapted to filter particles greater than about 20 microns in diameter.
14. The valve of claim 1, wherein the valve body and the housing comprise two distinct
15 structures adapted to be joined together.
15. The valve of claim 14, wherein the valve body and housing comprise a mating structure.
- 20 16. The valve of claim 1, further comprising a metering indicator.
17. The valve of claim 16, further comprising a spring within the housing and a spring retainer.
- 25 18. The valve of claim 17, wherein the spring retainer includes a marking corresponding to the degree to which the valve is open.
19. The valve of claim 1, further comprising a valve seat.
- 30 20. The valve of claim 19, wherein the valve seat is constructed of an elastomer.
21. The valve of claim 1, further comprising means for providing a gentle seal.

22. A valve, comprising:
a body and an outlet;
an opening in the body having a first portion proximate to the outlet and a second
portion distal to the outlet, wherein the second portion is broader than the first portion;
5 a closing member positioned within the body so as to selectively cover the opening.

23. A valve, comprising:
a body;
a closing member positioned within the body;
10 a housing;
a piston within the housing, connected to the closing member and having a
contaminant isolation region.

24. A media control valve, comprising:
15 a valve body having a media inlet and a media outlet;
a plunger positioned within the valve body;
a sleeve positioned within the valve body;
a media opening in the sleeve;
a housing connected to the valve body;
20 a piston having a contaminant isolation region positioned within the housing and
connected to the plunger; and
a base connected to the valve body in communication with the media outlet.

25. The valve of claim 24, wherein the base comprises a unitary structure including a
fluid passage and an attachment mechanism adapted to attach the base to the valve body.

26. The valve of claim 24, wherein the base comprises a fluid passage and a flow sleeve
within the fluid passage.

30 27. The valve of claim 26, wherein the flow sleeve is comprised of a wear resistant
material.

28. The valve of claim 26, wherein the flow sleeve is comprised of a chemically resistant material.

29. The valve of claim 24, wherein the media opening comprises a first portion proximate to the media outlet and a second portion distal to the media outlet and wherein the second portion is broader than the first portion.

30. The valve of claim 24, wherein the piston is convex in the direction of the valve body.

31. The valve of claim 24, further comprising at least one seal between the plunger and the valve body adapted to resist the passage of one of media, fluid, contaminants, and combinations thereof between the valve body and the housing.

32. The valve of claim 24, comprising three seals positioned between the plunger and the valve body.

33. The valve of claim 32, wherein the three seals are constructed as a unitary piece.

34. The valve of claim 24, wherein the housing comprises an exhaust chamber including a vent.

35. The valve of claim 34, wherein the vent comprises a filter.

36. The valve of claim 35, wherein the filter is adapted to filter particles greater than about 20 microns in diameter.

37. The valve of claim 24, wherein the valve body and the housing comprise two distinct structures adapted to be joined together.

38. The valve of claim 37, wherein the valve body and housing comprise a mating structure.

39. The valve of claim 24, further comprising a metering indicator.

40. The valve of claim 39, further comprising a spring within the housing and a spring retainer.

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41. The valve of claim 40, wherein the spring retainer includes a marking corresponding to the degree to which the valve is open.

42. The valve of claim 24, further comprising a valve seat.

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43. The valve of claim 42, wherein the valve seat comprises an elastomer.

44. The valve of claim 24, further comprising means for providing a gentle seal.

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45. A media control system comprising:
a media vessel;
an air flow path;
a media flow path having a substantially linear axis and including a media inlet connected to the media vessel and a media outlet connected to the media flow path; and
a media control valve positioned on the media flow path.

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46. The media control system of claim 45, wherein the substantially linear axis is substantially perpendicular with respect to a surface upon which the media control system rests.

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47. The media control valve of claim 45, wherein the substantially linear axis is substantially perpendicular to the axis of the air flow path.

48. A media control valve comprising:
a valve body comprising a media inlet and a media outlet;
means for providing a gentle seal positioned within the valve body;
a sleeve positioned within the valve body;
a media opening in the sleeve;

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